

- Quiz Thursday
- Test next Thursday

Ch. 10 → 9-16

9. Population

- All U.S. adults

Population parameter

- Proportion who have used and benefited from alternative medical treatments

Sampling Frame

- All Consumers Union subscribers

Sampling Method

- Not specified, but a questionnaire was probably mailed to subscribers

Sources of Bias

- Voluntary Response Bias

Types of Bias:

- Bias → under- or over-characterizing a particular characteristic of the population

- We must be careful with our sampling methods to reduce bias.

- Ways Bias happens...

- Sample badly with volunteers.

This leads to voluntary response bias, because people who respond typically have strong feelings about the subject.

- Sample badly, but conveniently.

A way to sample is called convenience sampling, but this leads to undercoverage of a group of the population.

Other Sources of Bias:

- Nonresponse Bias:
 - People not responding could affect the outcome of your study.
- Response Bias:
 - Do your questions influence the way people respond?
 - Try to eliminate poor questions.

Back to Questions from Book

10. Population

- All U.S. adults

Population Parameter

- Proportion of people that think marijuana should be legalized for medicinal purposes

Sampling Frame

- None given, but assumed to be visitors to the website

Sampling Method

- Voluntary Response Sampling

(Not a random sampling method!)

Source of Bias

- Voluntary Response Bias

11. Population

- Adults

Population Parameter

- Proportion that think drinking and driving is a serious problem

Sampling Frame

- Bar patrons

Sampling Method

- Systematic (every 10th person)
- Also chose a particular bar randomly from a list of bars

Source of Bias

- Undercoverage → not going to talk to people who don't go to bars

15. Population

- Snack food bags

Population Parameter

- Proportion passing inspection
(by having the correct weight)

Sampling Frame

- Bags made each day

Sampling Method

- Multistage

SRS of cases, then SRS of
bags in each case

Sources of Bias

- No sources of bias

12. Population

- City residents

Population Parameter

- Not clear. Might be interested in percentage of voters for each issue

Sampling Frame

- City voters

Sampling Method

- Multistage

Stratified by district and clustered by block

Sources of Bias

- Convenience sampling

13. Population

- Soil around former waste dump

Population Parameter

- Proportion with elevated levels of harmful substances

Sampling Frame

- Accessible soil around the dump

Sampling Method

- Not clear

Sources of Bias

- Possible convenience sampling

14. Population

- All cars

Population parameter

- Proportion of cars with up-to-date registrations, insurance, or safety inspections

Sampling Frame

- Cars on that road

Sampling Method

- Cluster sample of an area, stopping all cars in the cluster

Sources of Bias

- Undercoverage

16. Population

- Milk produced by dairy farm

Population Parameter

- Whether or not milk contains dirt, antibiotics, or foreign matter

Sampling Frame

- Milk produced on given day

Sampling Method

- Not specified

Sources of Bias

- Unbiased as long as day of inspection chosen randomly